

WHAT IS CLAIMED IS:

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1. A prilling method to prill a shear-thinnable mixture comprising the steps of:

- 5 a) providing a molten first component;
 b) mixing at least a second component with said molten first component;
 c) reacting said components to form a shear-thinnable mixture; and
 d) prilling said shear-thinnable mixture wherein said prilling comprises
mechanically agitating in the prill head to shear thin said shear-thinnable mixture
sufficiently to permit prilling.

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2. The method according to claim 1 wherein said shear-thinnable mixture is a melt
slurry.

3. The method according to claim 1 wherein said first component is ammonium nitrate
and said second component is ammonium sulfate.

4. The method according to claim 1 wherein said shear-thinnable mixture comprises
no more than about 2 weight percent water.

5. The method according to claim 3 wherein said shear-thinnable mixture further
comprises micronutrients.

6. The method according to claim 1 wherein said prill head is one of a rotating bucket
with a stationary blade, a stationary bucket with rotating scrapers and blades, and an
agitated, pressurized nozzle assembly.

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7. A prilling method to prill a shear-thinnable mixture through small prill holes
comprising the steps of:

- 30 a) providing a molten first component;
 b) mixing at least a second component with said molten first component;
 c) reacting said components to form a shear-thinnable mixture; and
 d) prilling said shear-thinnable mixture wherein said prilling comprises
mechanically agitating in the prill head to shear thin said shear-thinnable mixture
sufficiently and providing surface-wiping blades to permit prilling.

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8. The method according to claim 7 wherein said first component is ammonium nitrate
and said second component is ammonium sulfate.

9. The method according to claim 7 wherein said shear-thinnable mixture comprises no more than about 2 weight percent water.
10. The method according to claim 7 wherein said shear-thinnable mixture further comprises micronutrients.
11. An apparatus for prilling comprising:
a prill head having means to mechanically agitate to shear thin a shear-thinnable mixture.
12. The apparatus according to claim 11 wherein said prill head is one of a rotating bucket with a stationary blade, a stationary bucket with rotating scrapers and blades, and an agitated pressurized nozzle assembly.
13. The apparatus according to claim 11 where said means to mechanically agitate further comprises surface-wiping blades.

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